

Algebra/Topology Seminar

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ON ATTAINABILITY OF p -PRESENTATION DISTANCES

Thursday, October 23, 2025
3:00 p.m. in Massry B010

ABSTRACT. The p -presentation distance is an ℓ^p -type generalization of the interleaving distance defined for multiparameter persistence modules and merge trees. Despite recent NP-hardness results for the computation of presentation distances, certain fundamental aspects of these distances are still poorly understood. For example, is the infimum in the definition of the p -presentation distance actually attained? By appealing to linear optimization, we answer this question in the affirmative for $p = 1$ and provide bounds on the size of compatible presentations and the length of a sequence realizing the 1-presentation distance. We conjecture that the infimum is attained for all p , and state several open problems which, if solved, would result in partial or full resolution of the conjecture. This is joint work with Mike Lesnick.